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Tutorial: Y2K Where to Research and What it means to IS Education

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Work Shop Description

This workshop is designed to:

1. review the year 2000 problem and its solutions as implemented in organizations
2. take a look at what has actually been found
3. discuss the causes of the problem and who is “at fault”
4. discuss the impacts on IS education
5. discuss how we can research the Y2K data

The focus of the workshop is on reviewing how organizations have solved their Y2K problems and how we as academics can learn from what was found. A quick overview of the problem with specific solutions used will be provided to ensure everyone is at the same level. The main topics to be discussed include how the problem came about, i.e. the factors that led to the problem still being present when it has been known to exist for several years; how these factors affect IS education; and where sources of reliable data can be found.

Many causes of the problem have been proposed. Some claim it is the fault of management that refused to replace aging systems, chalking it up to corporate greed. Others have proposed that there is an underlying fault due to IS education. We have been teaching code reuse as a means of improving programmer productivity. Many of the Y2K problems found in newer programs and embedded systems are the results of re-using older code. Another proposal is that the lack of disciplined programming has caused the problem to be much more difficult to solve. Organizations have found a lack of documentation, version control, and structured, understandable code.

IS education needs to learn from Y2K. Practical IS management principles need to be emphasized. Project management has been identified as a weakness in many IS shops. IS control practices such as configuration control, version control, and documentation need to be emphasized.

How can we research Y2K projects? The standard Y2K project followed a set process that resulted in the generation and accumulation of a great deal of data and information. Most of this information is kept in project databases. Accessing this information poses several unique challenges. Much of this information is being preserved for possible litigation and organizations may be

reluctant to allow outside access. There are opportunities as many organizations are trying to find collateral benefits from their projects. Researchers may be able to gain access to project information in exchange for help in improving processes or interpreting the information to see what can be gained. Other possible information sources are combined industry effort databases. Several industries, such as banking, electrical utilities, oil, and natural gas have generated overall industry information bases. While there are nondisclosure agreements associated with these information bases, there may be opportunities in exchange for analysis assistance.

This tutorial is being led by an electric industry practitioner who has spent the last two years as the physical assets and contingency planning manager for a large utility. He has also been a leader in the electrical industry’s common Y2K effort. The information provided and discussed will be from the project insider’s viewpoint and not from the external Y2K expert viewpoint.

Expected Audience

This workshop is for those interested in software engineering, programming, control systems, systems engineering, informatics, and management of information systems. It is targeted to those who instruct and/or prepare curricula for software engineering programs, embedded systems design, management of IS, and social impacts of information systems.

Workshop Outline

- I. What is Y2K?
 - A. A date problem in software
 - B. A system problem within the BIOS and the RTC
- II. How does the Y2K Bug Affect Systems?
 - A. Software impacts
 - B. Embedded system impacts
 - C. Telecommunications systems impacts
 - D. Hardware impacts
- III. How do you fix the Y2K Bug?
 - A. Techniques
 - B. Project organization
- IV. What is the extent of the Y2K Problem?
 - A. The Financial Industry
 - B. The Utility Industry
 - C. The Telecommunications Industry
 - D. Other Industries

- E. Outside the US
- V. What has been its affect on Society?
 - A. Affects on the IS industry
 - B. Affects on the Public
- VI. Whose Fault is Y2K?
 - A. Programmer/System Designer's role
 - B. Management's role
 - C. IS Education's role
- VII. What have we learned and what should we teach?
 - A. Disciplined approach to programming
 - B. Use of standards and structured engineering
 - C. Code reuse and evaluation of system development costs
 - D. IS planning and management
 - E. Assessing risk
 - F. Informatics
- VIII. How do we research Y2K?
 - A. Pitfalls with the Case Study Approach
 - B. Pitfalls with the Quantitative Approach
 - C. Internal sources of data and information
 - D. External sources of data and information
 - E. Making contacts, issues to be aware of